

Date: Tuesday, 21/04/2009 4:01:10 PM
 User: Julie Dawson

Process Sheet

Customer :	CU-DAR001 Dart Helicopters Services	Drawing Name :	STEM
Job Number :	47346		
Estimate Number :	11107		
P.O. Number :		Part Number :	D34071
This Issue :	21/04/2009	S.O. No. :	
Prsht Rev. :	NC	Drawing Number :	D3407 REV E
First Issue :	/ /	Project Number :	N/A
Previous Run :	46042	Drawing Revision :	E
	Type :	Material :	
	MACHINED PARTS	Due Date :	04/05/2009
Written By :		Qty:	40
		Um:	Each
Checked & Approved By :	<u>JLD 0804-21</u>		
Comment :	Est Rev:A 05.10.18 New issue KJ/EC Est Rev:B Now on Doosan 08-05-14 JLM Verified By:DD Est Rev:C 08-08-12 revE as per dwg (ecn 08-507) DD verified by:EC		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
---------	-----------------------	---------------

1.0	M174R0750	17-4 round bar .750
-----	-----------	---------------------



Comment: Qty.: 0.3843 f(s)/Unit Total: 15.3720 f(s)
 Material: 17-4ph SS Round Bar Ø0.750(M17-4-R0.750)
 Batch: 1110777 ML

28/04/23

2.0	DOOSAN LATHE	DOOSAN LATHE
-----	--------------	--------------



Comment: DOOSAN CNC LATHE

1-Turn as per Folio FA596 Rev: 11/4 & Dwg D3407 Rev: E

2-Deburr

28/04/23

3.0	QC2	INSPECT PARTS AS THEY COME OFF MACHINE
-----	-----	--



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

28/04/23

4.0	QC8	SECOND CHECK
-----	-----	--------------



Comment: SECOND CHECK

28/04/23 (40)

5.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: Erick

28/04/24 (40)

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: D3407-1 PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: D Date: 09/04/23
 Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR: <u>47346</u>		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			
<u>09/04/23</u>	<u>2.0</u>	<u>OVERALL LENGTH UNDERSIZE. R.C.: PRESSURE FROM TURNING OPERATIONS PUSH WORKPIECE BACK INTO SPINDLE RESULT OF COLLET PRESSURE ADJUSTMENT BEING TOO LOW.</u>	<u>CP</u> <u>09.04.24</u> <u>pu</u> <u>QSI w/2</u>	<u>- INCREASE COLLET PRESSURE. - GRAP + REPLACE</u> <u>Batch: _____</u> <u>QTY 1</u>	<u>09/04/23</u>	<u>09/04/24</u>	<u>CP</u> <u>09.04.24</u> <u>pu</u> <u>QSI/042</u>	<u>S</u> <u>09/04/24</u>
		<u>RC: PROCESS</u>						

NOTE: Date & initial all entries

Date: Tuesday, 21/04/2009 4:01:10 PM
User: Julie Dawson

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: STEM

Job Number: 47346

Part Number: D34071

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

09/04/27
JH

Job Completion



u 09-04-27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD		Work Order: 47340
Description: Tow Ring		Part Number: D3407-1
Inspection Dwg: D3407	Rev: E	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

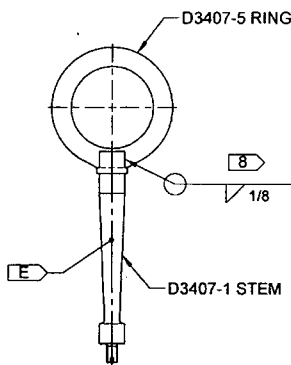
☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
0.063	+/-0.010	.065	—			
1/4-28 UNF	Max: 0.2668 Min: 0.2635	.2666	—			
Major Ø	Max: 0.249 Min: 0.2425	.246	—			
Ø0.625	+/-0.010	.626	—			
Ø0.363	+/-0.010	.363	—			
Ø0.750	+/-0.010	.749	—			
R0.100	+/-0.010	R 100	—			
0.470	+/-0.010	.468	—			
0.500	+/-0.010	.502	—			
3.250	+/-0.010	3.250	—			
4.250	+0.000/-0.010	4.243	—			
5.270	+/-0.010	5.273	—			
0.150	+/-0.010	.150	✓			
0.550	+/-0.010	.550	—			
0.625	+/-0.010	.627	—			
0.250	+0.010/-0.000	.257	—			

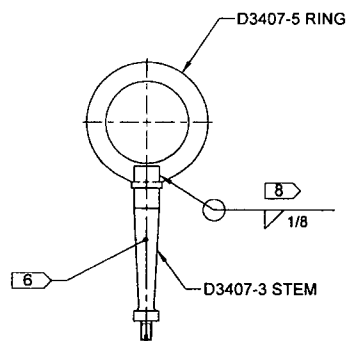
Measured by: [Signature]	Audited by: [Signature]	Prototype Approval:	N/A
Date: 03/04/23	Date: 09/04/24	Date:	N/A

Rev	Date	Change	Revised by	Approved
A	06.09.19	New Issue	KJ/JLM	
B	07.07.18	Tolerances for diameters updated per Machinists	KJ/JLM	
C	08.05.14	Dimensions updated per Dwg Rev D	KJ/JLM	
D	08.10.07	Dimensions updated per Dwg Rev E	KJ/DD	[Signature]

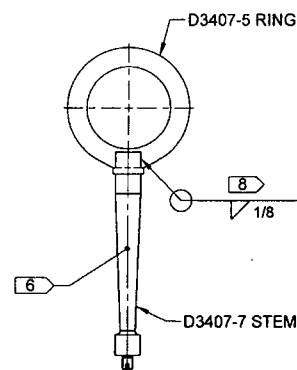
QTY -041	QTY -043	QTY -045	PART NUMBER	DESCRIPTION
X			D3407-041	TOW RING
	X		D3407-043	TOW RING
		X	D3407-045	TOW RING
1			D3407-1	STEM
	1		D3407-3	STEM
1	1	1	D3407-5	RING
		1	D3407-7	STEM



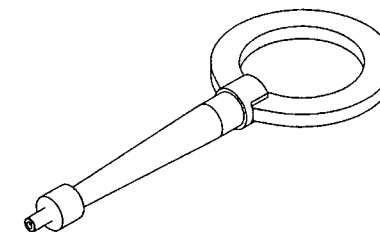
D3407-041 TOW RING



D3407-043 TOW RING



D3407-045 TOW RING



RELEASED

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
NO. 103510

NOTES:

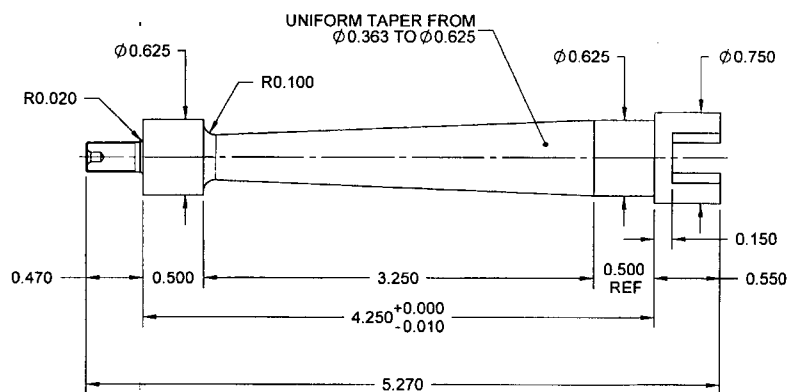
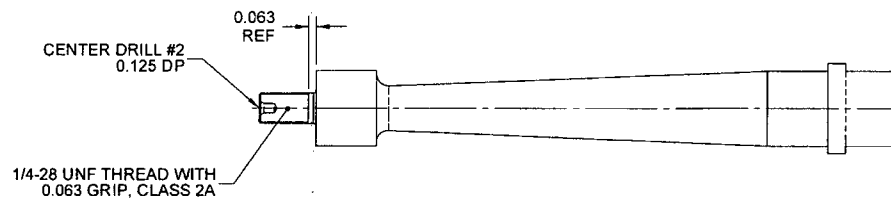
- 1) MATERIAL: N/A
- 2) FINISH: POWDER COAT WHITE (4.3.5.2) PER DART QSI 005 4.3 (EXCEPT THREADS)
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D3407-XXX" USING BLACK FINE POINT PERMANENT INK MARKER
- 7) WEIGHT: D3407-041 - 0.60 lbs, D3407-043 - 0.53 lbs, D3407-045 - 0.61 lbs
- 8) WELD PER DART QSI 004 ON ALL EDGES BETWEEN STEM AND RING

E	ADD D3407-045 (ZN B2-1, D8-1); ADD D3407-7 (ZN B6-5); REVISED NOTE 6 TO ADD IDENTIFICATION (ZN A5-1); REASON: PRODUCTION FACILITY	PH	08.07.23
D	D3407-1/3 SLOT WAS ROUND NOW FLAT FOR ASSEMBLY WITH D3407-5 (ZN C2-2, C2-3); D3407-5 WAS ROUND NOW FLAT ON ONE END FOR ASSEMBLY WITH D3407-1/3 (ZN B6-4); REASON: PRODUCTION FACILITY	PH	08.04.07
C	-1/3 LONGER FOR FIT W/WASHER	CP	05.09.09
B	UPDATE DIAMETER, THREAD CLASS ADDED	CP	05.06.17
A	NEW ISSUE	CP	05.03.16
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	08.07.23		

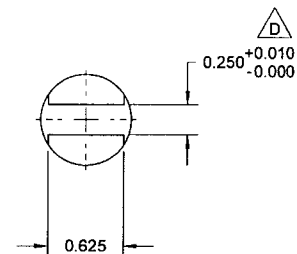
DART AEROSPACE USA, INC.
PORT HADLOCK, WA

DRAWING NO.
D3407
REV. E
SHEET 1 OF 5
TITLE
TOW RING
SCALE
NTS

COPYRIGHT © 2005 BY DART AEROSPACE USA, INC.
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSES OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.



D3407-1 STEM

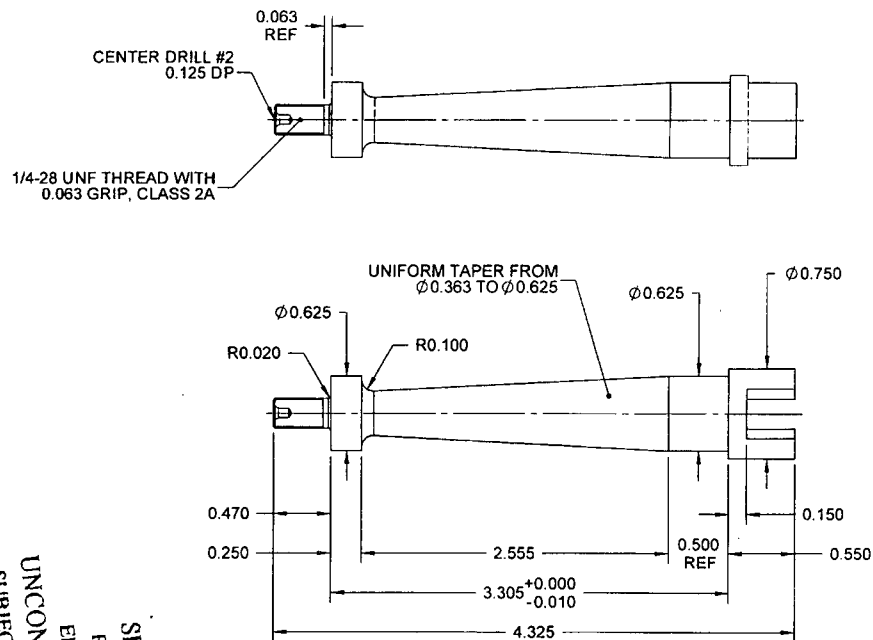


SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
NO. 1500

- NOTES:
- 1) MATERIAL: 17-4 PH SS ROUND BAR PER AMS 5643 (REF. DART SPEC M17-4-R)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: MACHINE ALL INSIDE EDGES WITH A 0.010 RADIUS
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 0.33 lbs

RELEASED

DESIGN	HP	DART AEROSPACE USA, INC.	
DRAWN	HP	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D3407	SHEET 2 OF 5
APPROVED		TITLE	SCALE
DE APPR.		TOW RING	NTS
DATE	08.07.23	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	



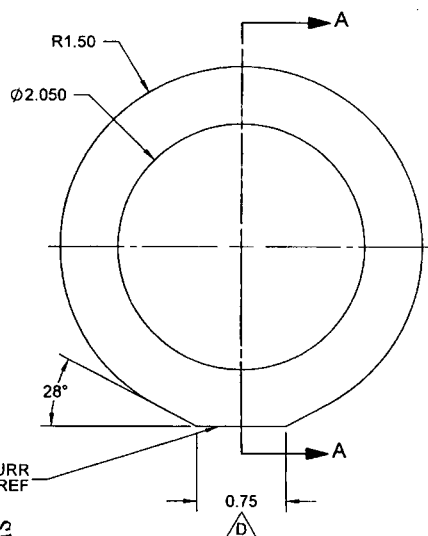
D3407-3 STEM

NO. 17-3407
 WORK ORDER
 WITHOUT NOTICE
 SUBJECT TO AMENDMENT
 UNCONTROLLED COPY
 ENGINEERING
 RETURN TO
 SHOP COPY

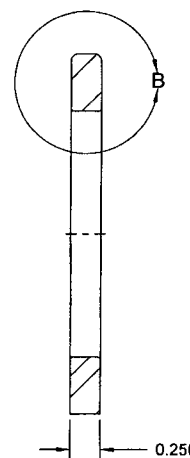
- NOTES:
- 1) MATERIAL: 17-4 PH SS ROUND BAR PER AMS 5643 (REF. DART SPEC M17-4-R)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: MACHINE ALL INSIDE EDGES WITH A 0.010 RADIUS
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 0.27 lbs

DESIGN	JP	DART AEROSPACE USA, INC.	
DRAWN	JP	PORT HADLOCK, WA	
CHECKED	JP	DRAWING NO.	REV. E
MFG. APPR.	JP	D3407	SHEET 3 OF 5
APPROVED	JP	TITLE	SCALE
DE APPR.	JP	TOW RING	NTS
DATE	08.07.23	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

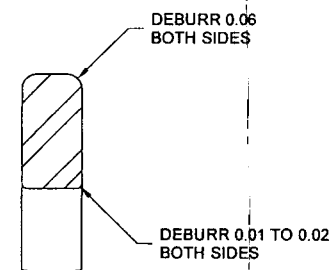
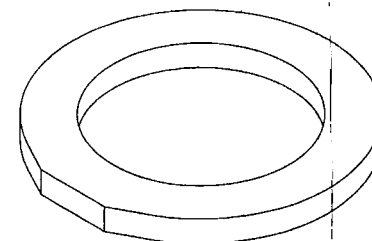
RELEASED
 08-08-01 11:11



D3407-5 RING



SECTION A-A



**DETAIL B
SCALE 2X**

RELEASED
08-06-2014

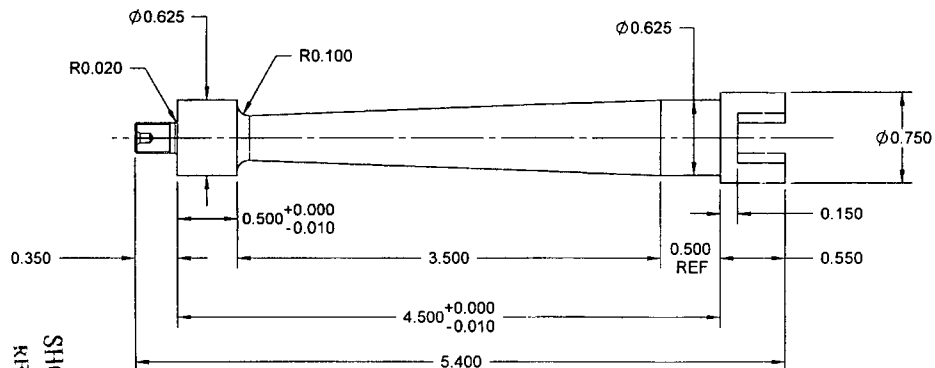
NO DEBURR REF
STOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 413410

- NOTES:**
- 1) MATERIAL: 17-4 PH SS BAR PER AMS 5604/5643 (REF. DART SPEC M17-4-B)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: N/A
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 0.27 lbs

DESIGN	97	DART AEROSPACE USA, INC.	
DRAWN	1/14	PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV. E
MFG. APPR.		D3407	SHEET 4 OF 5
APPROVED		TITLE	SCALE
DE APPR.		TOW RING	NTS
DATE	08.07.23	<small>COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.</small>	

0.063
REF
CENTER DRILL #2
0.125 DP






1/4-28 UNF THREAD WITH
0.063 GRIP, CLASS 2A



D3407-7 STEM

NO. 12345678
WORK ORDER
WITHOUT NOTICE
ENGINEERING
RETURN TO
SHOP COPY
UNCONTROLLED COPY
SUBJECT TO AMENDMENT

- NOTES:
- 1) MATERIAL: 17-4 PH SS ROUND BAR PER AMS 5643 (REF. DART SPEC M17-4-R)
 - 2) FINISH: NONE
 - 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
 - 4) UNITS: INCHES UNLESS OTHERWISE NOTED
 - 5) BREAK SHARP EDGES: MACHINE ALL INSIDE EDGES WITH A 0.010 RADIUS
 - 6) IDENTIFICATION: N/A
 - 7) WEIGHT: 0.34 lbs

DESIGN	AJS	DART AEROSPACE USA, INC.	
DRAWN		PORT HADLOCK, WA	
CHECKED		DRAWING NO.	REV.
MFG. APPR.		D3407	SHEET 5 OF 5
APPROVED		TITLE	SCALE
DE APPR.		TOW RING	NT
DATE	08.07.23	COPYRIGHT © 2005 BY DART AEROSPACE USA, INC. THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

RELEASED
08.07.23